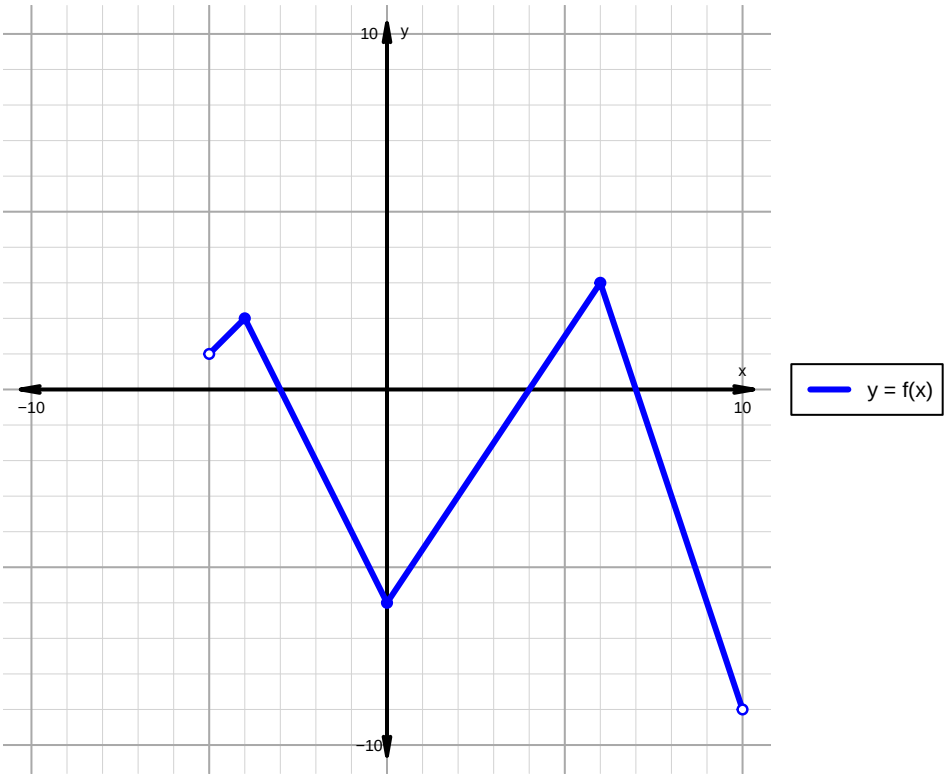
Name: Date:

Intervals, Transformations, and Slope Solution (version 21)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-5,-3)\cup(4,7)$
Negative	$(-3,4)\cup(7,10)$
Increasing	$(-5,-4)\cup(0,6)$
Decreasing	$(-4,0)\cup(6,10)$
Domain	$(-5,10)$
Range	$(-9,3)$

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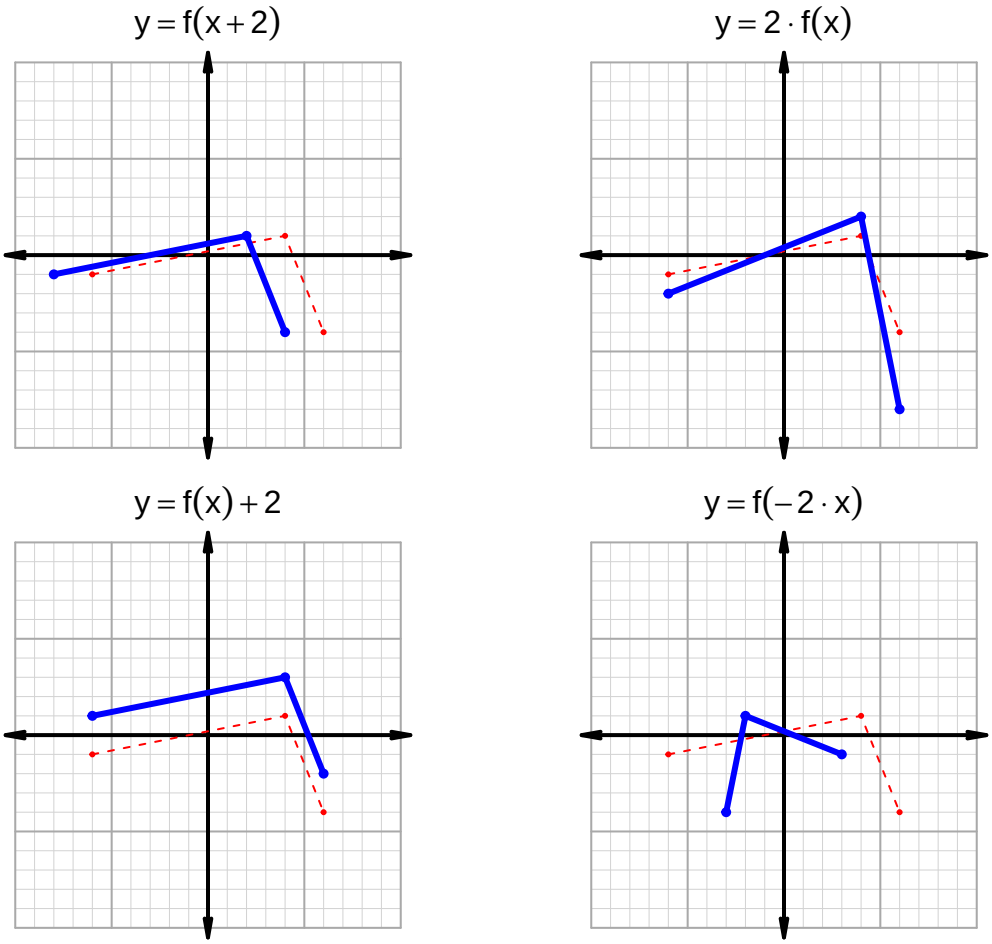
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 46$ and $x_2 = 86$. Express your answer as a reduced fraction.

x	$g(x)$
46	81
57	46
81	86
86	57

$\frac{f(86)-f(46)}{86-46} = \frac{57-81}{86-46} = \frac{-24}{40}$

The greatest common factor of -24 and 40 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-3}{5}$$